What is Claimed is:

[c1] A method of propelling a model submarine using bilge pumps and exacting buoyancy to allow a completely functional model without any external moving parts. This is accomplished with fixed directional water jet nozzles providing thrust powered by bilge pumps acting as miniature turbine units. Directional nozzles in the front of the sub are used for turning, reverse, and submerging. Water jet nozzles in the rear of the sub provide forward thrust. Surfacing is accomplished by terminating forward thrust either by design or through loss of signal.

A method of propelling a model submarine using bilge pumps and exacting buoyancy to allow a completely functional model without any external moving parts; this is accomplished with fixed directional water jet nozzles providing thrust powered by bilge pumps acting as miniature turbine units, directional nozzles in the front of the sub are used for turning, reverse, and submerging, water jet nozzles in the rear of the sub provide forward thrust, surfacing is accomplished by terminating forward thrust either by design or through loss of signal.

[c2] A method according to claim 1 which can be applied to model submarine's varying in length from 4ft to 7 ft. (or some other reasonable length) based on 4 ft. and 7 ft. prototypes.

[c3] The proposed control/propulsion system is significantly different from Fleischman (4, 919, 637) in that he uses only one pump (not specified as a bilge pump) to actuate hydraulically activated bellows servos which provide movement through rods and levers to actuate externally moving dive planes and rudder. The system proposed herein uses individual bilge pumps for directional control including submerging. The Fleischman system is very complex with many intricate parts including the ballast system, solenoid control valves, and diaphragm actuators. These parts are functionally no different than servos used in a typical radio control systems to move, in submarines, dive planes and the rudder, in airplanes the ailerons and rudder etc. the only difference being that the Fleischman servos are hydraucly activated instead of electrically activated as are typical RC servos. Whereas the proposed control/propulsion system is very simple by comparison. Figures 1 through 5 show the complete system, components of which are a sealed battery, to supply power, a watertight chamber made of PVC pipe or any other suitable material in which a radio receiver, solid-state electrical switches and automotive type relays are located. The watertight chamber merely serves to keep the electrical components dry and the electrical components merely distribute power (through wires exiting the watertight chamber) to the various bilge pumps to provide thrust and control direction. The other components are the bilge pumps themselves, plumbing consisting of PVC pipe and brass nozzles and the various wires to supply power to the bilge pumps. The main components are thus simply, the battery, the watertight chamber, and the bilge pumps.

[c3] The proposed control/propulsion system is significantly different from referenced embodiments, the system proposed herein is the only system which uses individual bilge pumps for directional control including submerging, the proposed control/propulsion system is very simple by comparison, Figures 1 through 5 show the complete system, components of which are a sealed battery, to supply power, a watertight chamber made of PVC pipe or any other suitable material in which a radio receiver, solid-state electrical switches and automotive type relays are located, the watertight chamber merely serves to keep the electrical components dry and the electrical components merely distribute power (through wires exiting the watertight chamber) to the various bilge pumps to provide thrust and control direction, the other components are the bilge pumps themselves, plumbing consisting of PVC pipe and brass nozzles and the various wires to supply power to the bilge pumps, the main components are thus simply, the battery, the watertight chamber, and the bilge pumps making an extremely simple control/propulsion system.

[c4] ~~The proposed control/propulsion system is significantly different from Cicoff etc. (6,601,333). His game decoy, for one does not submerge and while a jet propulsion system is proposed, it uses functionally equivalent RC servos or solenoids to operate a three-way directional valve. This is similar to Fleischman where instead of hydraulic servos being used to activate dive planes and rudder's, Cicoff etc proposes mechanical/electrical operation of a directional valve. Whereas in the system proposed herein there are no moving directional valves, connecting rods, solenoid switches or servos or equivalent electro/mechanical devices. Jet nozzles are fixed and powered by individual bilge pumps. Furthermore this game decoy is not proposed as a submarine having the ability to submerge as in the proposed embodiment.~~

The proposed control/propulsion system is significantly different from Cicoff etc. (6,601,333), which is for a game decoy, which does not not submerge and while a jet propulsion system is proposed, it uses functionally equivalent RC servos or solenoids to operate a three-way directional valve, this is similar to other referenced embodiments where instead of hydraulic servos being used to activate dive planes and rudder's, Cicoff etc proposes mechanical/electrical operation of a directional valve, whereas in the system proposed herein there are no moving directional valves, connecting rods, solenoid switches or servos or equivalent electro/mechanical devices, jet nozzles are fixed and powered by individual bilge pumps, furthermore this game decoy is not proposed as a submarine having the ability to submerge as in the proposed embodiment.

[c5] A method according to claim 1 which can be applied to model submarines varying in length from 4ft to 7 ft. (or some other reasonable length/size/shape) based on 4 ft. and 7 ft. prototypes, where the size and number of individual bilge pumps may vary to meet different requirements imposed by different restraints according to hull size and internal dimensions. As an example a large submarine may require two bilge pumps for a down direction whereas a smaller hull may suffice with only one. Size and/or length of a model submarine would be reasonably limited by the size of available bilge pumps. A submarine that is too small or of limited internal space would be limited by the size of the smallest bilge pump currently available which provides functionality as described in accordance with claim 1. Likewise, too large a submarine would be limited by the largest bilge pump available and able to provide functionality as described consonant with claim 1.

A method according to claim 1 which can be applied to model submarines varying in length from 4ft to 7 ft. (or some other reasonable length/size/shape) based on 4 ft. and 7 ft. prototypes, where the size and number of individual bilge pumps may vary to meet different requirements imposed by different restraints according to hull size and internal dimensions, as an example a large submarine may require two bilge pumps for a down direction whereas a smaller hull may suffice with only one, size and/or length of a model submarine would be reasonably limited by the size of available bilge pumps, a submarine that is too small or of limited internal space would be limited by the size of the smallest bilge pump currently available which provides functionality as described in accordance with claim 1, likewise, too large a submarine would be limited by the largest bilge pump available and able to provide functionality as described consonant with claim 1.